

## CLAIMS

1. A method of diagnosing a predisposition to developing PRC in a subject, comprising determining a level of expression of a PRC-associated gene in a patient derived biological sample, wherein an increase or decrease of said level compared  
5 to expression level of said gene in PIN indicates that said subject is at risk of developing PRC.
2. The method of claim 1, wherein said PRC -associated gene is selected from the group consisting of PRC 1-40, wherein an increase in said level compared to a level in PIN indicates said subject is at risk of developing PRC.
- 10 3. The method of claim 2, wherein said increase is at least 10% greater than said level in PIN.
4. The method of claim 1, wherein said PRC -associated gene is selected from the group consisting of PRC 41-138, wherein a decrease in said level compared to a level in PIN indicates said subject is at risk of developing PRC.
- 15 5. The method of claim 4, wherein said decrease is at least 10% lower than said level in PIN.
6. The method of claim 1, wherein said method further comprises determining said level of expression of a plurality of PRC -associated genes.
7. The method of claim 1, wherein the expression level is determined by any one  
20 method select from group consisting of:
  - (a) detecting the mRNA of the PRC -associated genes,
  - (b) detecting the protein encoded by the PRC -associated genes, and
  - (c) detecting the biological activity of the protein encoded by the PRC -associated genes.
- 25 8. The method of claim 1, wherein said level of expression is determined by detecting hybridization of a PRC -associated gene probe to a gene transcript of said patient-derived biological sample.
9. The method of claim 8, wherein said hybridization step is carried out on a DNA

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array.

10. The method of claim 1, wherein said biological sample comprises an epithelial cell.
11. The method of claim 1, wherein said biological sample comprises prostate cancer cell.
- 5 12. The method of claim 8, wherein said biological sample comprises an epithelial cell from a PRC.
13. A PRC reference expression profile, comprising a pattern of gene expression of two or more genes selected from the group consisting of PRC 1-138.
14. A PRC reference expression profile, comprising a pattern of gene expression of two or more genes selected from the group consisting of PRC 1-40.
- 10 15. A PRC reference expression profile, comprising a pattern of gene expression of two or more genes selected from the group consisting of PRC 41-138.
16. A method of screening for a compound for treating or preventing PRC, said method comprising the steps of:
  - 15 a) contacting a test compound with a polypeptide encoded by PRC 1-138;
  - b) detecting the binding activity between the polypeptide and the test compound;
  - and
  - c) selecting a compound that binds to the polypeptide.
17. A method of screening for a compound for treating or preventing PRC, said method comprising the steps of:
  - 20 a) contacting a candidate compound with a cell expressing one or more marker genes, wherein the one or more marker genes is selected from the group consisting of PRC 1-138; and
  - b) selecting a compound that reduces the expression level of one or more marker genes selected from the group consisting of PRC 1-40, or elevates the expression level of one or more marker genes selected from the group consisting of PRC 41-138.
- 25 18. The method of claim 17, wherein said test cell comprises a prostate cancer cell.

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19. A method of screening for a compound for treating or preventing PRC, said method comprising the steps of:
- a) contacting a test compound with a polypeptide encoded by selected from the group consisting of PRC 1-138;
  - 5 b) detecting the biological activity of the polypeptide of step (a); and
  - c) selecting a compound that suppresses the biological activity of the polypeptide encoded by PRC 1-40 in comparison with the biological activity detected in the absence of the test compound, or enhances the biological activity of the polypeptide encoded by PRC 41-138 in comparison with the biological activity
  - 10 detected in the absence of the test compound.
20. A method of screening for compound for treating or preventing PRC, said method comprising the steps of:
- a) contacting a candidate compound with a cell into which a vector comprising the transcriptional regulatory region of one or more marker genes and a reporter gene
  - 15 that is expressed under the control of the transcriptional regulatory region has been introduced, wherein the one or more marker genes are selected from the group consisting of PRC 1-138
  - b) measuring the expression or activity of said reporter gene; and
  - c) selecting a compound that reduces the expression or activity level of said reporter
  - 20 gene when said marker gene is an up-regulated marker gene selected from the group consisting of PRC 1-40, as compared to a level in control or that enhances the expression level of said reporter gene when said marker gene is a down-regulated marker gene selected from the group consisting of PRC 41-138, as compared to a level in control.
- 25 21. A kit comprising a detection reagent which binds to two or more nucleic acid sequences selected from the group consisting of PRC 1-138.
22. An array comprising a nucleic acid which binds to two or more nucleic acid sequences selected from the group consisting of PRC 1-138.
23. A method of treating or preventing PRC in a subject comprising administering to
- 30 said subject an antisense composition, said composition comprising a nucleotide sequence complementary to a coding sequence selected from the group consisting

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of PRC 1-40.

24. A method of treating or preventing PRC in a subject comprising administering to said subject a siRNA composition, wherein said composition reduces the expression of a nucleic acid sequence selected from the group consisting of PRC 1-40.
25. A method of treating or preventing PRC in a subject comprising the step of administering to said subject a pharmaceutically effective amount of an antibody or fragment thereof that binds to a protein encoded by any one gene selected from the group consisting of PRC 1-40.
26. A method of treating or preventing PRC in a subject comprising administering to said subject a vaccine comprising a polypeptide encoded by a nucleic acid selected from the group consisting of PRC 1-40 or an immunologically active fragment of said polypeptide, or a polynucleotide encoding the polypeptide.
27. A method of treating or preventing PRC in a subject comprising administering to said subject a compound that increases the expression or activity of PRC 41-138.
28. A method of treating or preventing PRC in a subject, said method comprising the step of administering a compound that is obtained by the method according to any one of claims 16-20.
29. A method of treating or preventing PRC in a subject comprising administering to said subject a pharmaceutically effective amount of polynucleotide select from group consisting of PRC 41-138, or polypeptide encoded by thereof.
30. A composition for treating or preventing PRC, said composition comprising a pharmaceutically effective amount of an antisense polynucleotide or small interfering RNA against a polynucleotide select from group consisting of PRC 1-40 as an active ingredient, and a pharmaceutically acceptable carrier.
31. A composition for treating or preventing PRC, said composition comprising a pharmaceutically effective amount of an antibody or fragment thereof that binds to a protein encoded by any one gene selected from the group consisting of PRC 1-40 as

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an active ingredient, and a pharmaceutically acceptable carrier.

32. A composition for treating or preventing PRC, said composition comprising a pharmaceutically effective amount of the compound selected by the method of any one of claims 16-20 as an active ingredient, and a pharmaceutically acceptable carrier.

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